



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/786,494

02/25/2004

Martin Opitz

BP-95

3123

7590  
Friedrich Kueffner  
Suite 910  
317 Madison Avenue  
New York, NY 10017

09/08/2008

EXAMINER

PAUL, DISLER

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

09/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/786,494	<b>Applicant(s)</b> OPITZ, MARTIN	
	<b>Examiner</b> DISLER PAUL	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5/12/08.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/12/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 5/12/08 have been fully considered with regard to Pal et al. failing to disclose of the following limitation as included in the claim wherein the {"loudspeaker emitting periodic noise signal" and "evaluating the response of each of the response signals of each of the microphones and filters as a response to the signals" and "comparing the response with model signals stored in the processor"}, but such argument are non-persuasive.

Please, Note, Pal et al. did disclose of the specific wherein the" evaluating the response of each of the response signals of each of the microphones and filters as a response to the signals and comparing the response with model signals stored in the processor; (fig.2 wt (58,60, 26,56); col.4 line 15-45; col.3 line 25-34/to match with ref filter with processor for each filters with associating microphones with the reference filter ').

And similarly, for the "loudspeaker emitting periodic noise signal", Note that Pal disclose of the loudspeaker emitting an output signals according to the reference known electrical signal and such that this electrical signal has sampling interval and outputting digital outputting signals for each sampling interval (col.2 line 45-55; col.3 line 1-10/to emit pure tone signal).

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Pla et al. (5,402,669).

Re claim 1, Pla et al. disclose of the Array microphone with several individual microphones connected with a signal processor that comprises at least one digital filter for each individual microphone, in particular for voice recognition (fig.2 wt (38,40,48,50), col.3 line 45-65)), wherein at least one loudspeaker is provided, which is arranged in the acquisition range of each of the individual microphones (fig.2 wt (20)); col.3 lines 35-40)), an electronic circuit applies a signal to the loudspeaker in such a manner that it emits a predetermined periodic noise signal (fig.2 wt (24,26,28), col.3 line 5-10; col.3 line 1-10; col.2 line 45-65/to emit pure tone signal)), and that the signal processor evaluates the response signals coming from each of the microphones and/or from each of the digital filters as a response to the reception of the noise signal and wherein the signal processor is configured to compare the response signals with model signals stored in the signal processor or externally (fig.2, col.3 line 25-34 & col.4 line 17-30 & line 38-48/ the output at each filter equal to the output at processor within a predetermined stored value).

Re claim 5, Pla et al. disclose of the Method for the automatic calibration of array microphones, comprising several individual microphones connected to a signal processor that comprises at least one digital filter for each individual microphone(fig.2 wt (38,40,48,50; col.3 line 60-65), whereby the signal processor increases the sound concentration of the array microphone and

Art Unit: 2615

suppresses lateral sound sources by means of an appropriate algorithm applied to the individual microphone signals, whereby filter coefficient sets used in the digital filters and which are characteristic for the arrangement, type, sensitivity, and characteristics of the used individual microphones (fig.2 ;col.3 line 67 & col.4 line 12; col.6 line 67 & col.7 line 5/adaptive filter with coefficients ), the acoustical environment, and the location of the sound sources are components of the algorithm, characterized in that at least one loudspeaker is provided in the acquisition range of each individual microphone, which loudspeaker is connected with a signal processor, to which each individual microphone is also connected, in that the signal processor emits via the loudspeaker, a predetermined periodic noise signal (fig.2 wt (24,26,28), col.3 line 5-10; col.3 line 1-10)), that the signal processor evaluates the response signals that subsequently come from each individual microphone and/or from each digital filter and compares them with model signals which are stored in the signal processor, or externally, and which correspond to properly operating individual microphones or properly operating digital filters, and that the signal processor, as a function of the deviation of the response signals from the model signals, changes the value of individual filter coefficients or of all the filter coefficients of the filter coefficient set and repeats the test until the response signals are in the range of the model signals (fig.2, col.4 line 17-30 & line 38-48/ the output at each filter equal to the output at processor within a predetermined stored value,)).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Pla et al. (5,402,669).

Re claim 2, Pla et al. disclose the method for checking array microphones, comprising connecting several individual microphones connected with a signal processor, wherein at least one loudspeaker is provided in the acquisition range of each of the individual microphones and connected with a signal processor, to which each microphone is also connected, and that the signal processor emits a predetermined periodic noise signal via the loudspeaker, wherein the signal processor evaluates the response signals that subsequently come from each individual microphone and/or from each of the digital filters, and compares them with model signals stored in the signal processor or externally, and which correspond to properly operating

individual microphones or properly operating filters(see claim 1 rejection).

But, Pla et al. fail to disclose of the display and having the signal processor provides a display in the form of a message from the model signals. However, official notice is taken the limitation of having a display to provide the status of the device in the form of a message is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporate the having a display to provide the status of the device in the form of a message for enabling the user to visually be informed of the operating condition of the device.

Re claim 6, which has been rejected by Pla et al. and claim the same limitation as set forth in claim 2 has been analyzed and reject over such claim 2. (See claim 2 rejection above).

4. Claim 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pla et al. (5,402,669) and further in view of Shuttleworth (2002/0071568 A1) and Flentje (US 2002/0048379 A1).



Re claim 3, the method according to claim 2, with the loudspeaker emitting a predetermined periodic signal, and of the system of having an A/D convertor (col.2 line 29-32), However, Pla et al. fail to specifically disclose of the verification is carried out before emitting a predetermined periodic noise signal via the loudspeaker, and where the loudspeaker signal is directly applied to the A/D converter and having the signal is recorded and evaluated by comparing this signal with a reference signal that originates from the measurement with a reference impedance instead of the loudspeaker impedance.

However, Shutttleworth disclose of a monitoring impedance speaker wherein the similar concept of having the verification is carried out before emitting the noise signal via the loudspeaker, and where the loudspeaker signal is directly applied to the digital processor and further of having the signal is recorded and evaluated by comparing this signal with a reference signal that originates from the measurement with a reference impedance instead of the loudspeaker impedance (fig.1-2; page 1[0008-9; page 2[0017]) for the purpose of performing self-diagnostic test in ensuring the audio system is working properly. Thus, taking the combined teaching of Pla et al. and Shutttleworth as a whole, it would have been obvious for one of the ordinary skill in the art to add the verification is carried out before emitting the noise signal via the loudspeaker, and where the loudspeaker signal is directly applied to the digital processor and

further of having the signal is recorded and evaluated by comparing this signal with a reference signal that originates from the measurement with a reference impedance instead of the loudspeaker impedance added to the teaching of Pla et al. for the purpose of performing self-diagnostic test in ensuring the audio system is working properly.

While, the combined teaching Pla et al. and Shutttleworth as a whole, fail to explicitly disclose of the having the A/D converter wherein the speaker signal is directly applied to. However, Shutttleworth did disclose of having the loudspeaker signal directly directed to the digital amplifier (fig.1 (27,12)), thus with the above, it is inherent of the existence of such A/D converter being incorporated in the system which convert the signal so as to be processed by the digital processor (fig.1 (12)).

However, the combined teaching of Pla et al. and Shutttleworth as a whole, fail to disclose of the configuration of the system wherein the loudspeaker, together with the output resistance of the output amplifier which operates the loudspeaker, forms a voltage divider.

However, Flentje disclose a system wherein the similar concept of having the configuration of the system wherein the loudspeaker, together with the output resistance of the output amplifier which operates the loudspeaker, forms a voltage divider (fig.2 (20,24,18);

Art Unit: 2615

page 3[0033]) for the purpose of enabling the device to consummate unnecessary electrical energy and thus maintaining the harmonic distortions and dynamic response of the signal at constant quality.

Thus, taking the now combined teaching of Pla et al. and Shuttltleworth and Flentje as a whole, it would have been obvious for one of the ordinary skill in the art to have added the configuration of the system wherein the loudspeaker, together with the output resistance of the output amplifier which operates the loudspeaker, forms a voltage divider as in the modified version of the combined teaching of Pla et al. and Shuttltleworth as a whole, for the purpose of enabling the device to consummate unnecessary electrical energy and thus maintaining the harmonic distortions and dynamic response of the signal at constant quality.

However, the combined teaching of Pla et al. and Shuttltleworth and Flentje as a whole, fail to disclose of the having the loudspeaker operating in parallel to the impedance of the A/D convertor. However, official notice is taken that the concept of having the loudspeaker operating in parallel to the impedance of the A/D convertor is simply the inventor's preference, thus it would have been obvious for one for one of the ordinary skill in the art to have modify the combined teaching of Pla et al. and Shuttltleworth and Flentje as a whole, by incorporating the having the loudspeaker operating in parallel to the

impedance of the A/D convertor for generating predetermined periodic signal sounds.

Re claim 4, the method according to claim 3, characterized in that the ratio of the loudspeaker impedance to the input impedance of the A/D converter is verified and, However, the combined teaching of Pla et al. and Shutttleworth and Flentje as a whole, fail to explicitly disclose of the teaching wherein if it deviates too far from the value of 1, is adjusted by an additional pre-resistance, which is switched in front of the loudspeaker.

However, Flentje discloses a system of maintaining the input impedance within a speaker network wherein the adjustable resistor is provided in between the speaker (fig.2(26); page 3[0029]) for the purpose of achieving desired sound with a constant proportional quality of high frequencies in the applied sound signals and constant tonal quality at any loudspeaker volume level. Thus, taking the combined teaching of Pla et al. and Shutttleworth and the additional teaching Flentje as a whole, it would have been obvious at the time of the inventions to have incorporated the maintaining the input impedance within a speaker network wherein the adjustable resistor is provided in between the speaker for the purpose of achieving desired sound with a constant proportional quality of high frequencies in the

applied sound signals and constant tonal quality at any loudspeaker volume level.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./  
Examiner, Art Unit 2615

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2615

